## BIOGRAPHICAL SKETCH

**NAME: _Christal C. Bowman____ POSITION TITLE: _Postdoctoral Fellow, R-Authority**

**EDUCATION/TRAINING**

| Institution | Degree | Year | Field of Study |
|---|---|---|---|
| College of William & Mary, Williamsburg, VA. | B.S. | 1996 | Biology |
| Tulane University, New Orleans, LA. | Ph.D. | 2001 | Microbiology and Immunology |

**PROFESSIONAL EXPERIENCE**

U.S. Environmental Protection Agency, Immunotoxicology Branch
Postdoctoral Fellow (R-Authority), August 2004 – Present.
University of North Carolina at Charlotte, Department of Biology
Postdoctoral Research Associate, July 2001 – July 2004.

**PROFESSIONAL SOCIETIES & PUBLICATION BOARDS**

American Academy of Allergy, Asthma & Immunology, current member.
Society of Toxicology, current member.
American Association of Immunologists, prior Trainee member, joined 2001.
American Society for Microbiology, prior Student member, joined 1997.

**ELECTED AWARDS AND HONORS**

EPA Bronze Medal for exceptional efforts to coordinate across the Federal sector and scientific community to significantly advance EPA's ability to evaluate the safety of plant incorporated protectants, as part of the ORD Biotechnology Research Program Steering Committee, September 2006.
American Academy of Allergy, Asthma, and Immunology Strategic Training in Allergy Research Award, March 2006 and 2008.
Sigma Xi Award for Excellence in Research and Presentation by a Graduate Student, Tulane University, 2000.
Louisiana Educational Quality Support Fund Fellowship, Tulane University, 1996-2000.

**INVITED LECTURES/SYMPOSIA**

ILSI/HESI Protein Allergenicity Technical Committee New Methods Workshop, Nice, France, October 2007.
2nd Symposium for Agricultural Biotechnology Risk Analysis Research, Food and Drug Administration, 2007.
National Center for Environmental Research meeting for grant recipients of Science to Achieve Results (STAR) support: development of methods to assess potential allergenicity, 2006.
EPA Science Forum platform presentation, Washington DC, May 2006.
Federal Interagency Workshop on Research and Collaborative Opportunities in Crop-Based Food and Feed Allergies, U.S. Department of Agriculture, 2006.
American Association of Immunologists 90th Anniversary Annual Meeting, platform presentation,

Denver, CO, 2003.

**ASSISTANCE/LEADERSHIP PROVIDED TO THE SCIENTIFIC COMMUNITY**
Lecturer, Immunotoxicology, North Carolina State University, Fall 2005.
Lecturer, Biochemical Toxicology, North Carolina State University, Spring 2005-2007.
Lecturer, Virology, University of North Carolina at Charlotte, 2001-2003.
Lecturer, Advanced Immunology Laboratory Techniques, University of North Carolina at Charlotte, 2002.
Co-advisor/laboratory supervisor, Undergraduate Honors Research Program, University of North Carolina at Charlotte, 2003 -2004.
Volunteer Tutor, New Orleans Science and Mathematics High School, 1996-1999.

**ASSISTANCE/LEADERSHIP PROVIDED TO THE AGENCY**
Biotechnology Research Team, 2004-2008.
Moderator, Experimental Toxicology Journal Club for non-native English speakers, 2007.

**PUBLICATIONS**
**Christal C. Bowman**, John D. Clements. Differential biological and adjuvant activities of cholera toxin and *Escherichia coli* heat-labile enterotoxin hybrids. *Infect Immun*. 2001 Mar;69(3):1528-35.

**Christal C. Bowman**, Amy Rasley, Susanne L. Tranguch, Ian Marriott. Cultured astrocytes express Toll-like receptors for bacterial products. *Glia.* 2003 Sep;43(3):281-91.

**Christal C. Bowman**, Kenneth L. Bost. *Salmonella* induces cyclooxygenase-2 mediated prostaglandin production *in vivo* and in cultured macrophages and dendritic cells. *J. Immunol.* 2004 Feb;172(4):2497-75.

**Christal C. Bowman**, Kenneth L. Bost. Cyclooxygenase-2 inhibition enhances activation of Th1 responses during *Salmonella* infection. Under revision.

MaryJane K. Selgrade, Dori R. Germolec, Robert W. Luebke, Ralph J. Smialowicz, Marsha D. Ward, and **Christal C. Bowman.** Immunotoxicity. Book chapter: *Introduction to Biochemical Toxicology*. 4th Edition. Ed: E. Hodgson, and R.C. Smart, J. Wiley and Sons, NY, NY. In press.

**Christal C. Bowman,** MaryJane K. Selgrade. Differences in allergenic potential of food extracts following oral exposure in mice reflect differences in digestibility: Potential approaches to safety assessment. *Toxicol. Sci.* 2007 doi: 10.1093/toxsci/kfm288

**NARRATIVE**
Research at Tulane University: Engineered, produced, and characterized hybrid bacterial toxins capable of enhancing immune responses to unrelated antigens when administered orally or intranasally (mucosal adjuvants for vaccine use).
Research at the University of North Carolina at Charlotte: Examined the role of inflammatory mediators in the initiation of early immune responses against *Salmonella*. Collaborated on one project involving recognition of bacterial components by immune cells of the brain and another to

engineer modified bacterial toxin into soybeans as an adjuvant for oral vaccination of cattle against diarrheal disease.
Research at the U.S. EPA: Currently developing an animal model for food allergy in order to assess the allergenicity and safety of genetically modified pest-protected food crops.